



SUBSTITUTE SEQUENCE LISTING

<110> Thibeault, Diane
Lamarre, Daniel
Maurice, Roger
Pilote, Louise
Pause, Armin

<120> Purified Active HCV NS2/3 Protease

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Leu Ala Leu Leu Thr Leu Ser Pro Tyr Tyr Lys Val Leu Leu Ala Arg
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Leu Ile Trp Trp Leu Gln Tyr Leu Ile Thr Arg Val Glu Ala His Leu
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Gln Val Trp Ile Pro Pro Leu Asn Val Arg Gly Arg Asp Ala Ile
50 55 60

atc ctc ctc acg tgc gca gtc cac cca gag cta atc ttt gac atc acc 240
Ile Leu Leu Thr Cys Ala Val His Pro Glu Leu Ile Phe Asp Ile Thr
65 70 75 80

aaa ctc ctg ctc gcc ata ttc ggt ccg ctc atg gtg ctc cag gca ggc 288
Lys Leu Leu Ala Ile Phe Gly Pro Leu Met Val Leu Gln Ala Gly
85 90 95

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Ile Thr Lys Val Pro Tyr Phe Val Arg Ala Gln Gly Leu Ile Arg Ala
100 105 110

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Cys Met Leu Val Arg Lys Ala Ala Gly Gly His Tyr Val Gln Met Ala			
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Phe Met Lys Leu Ala Ala Leu Thr Gly Thr Tyr Val Tyr Asp His Leu			
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Thr Pro Leu Gln Asp Trp Ala His Ala Gly Leu Arg Asp Leu Ala Val			
145	150	155	160
gcg gta gag ccc gtc atc ttc tct gac atg gag gtc aag atc atc acc			528
Ala Val Glu Pro Val Ile Phe Ser Asp Met Glu Val Lys Ile Ile Thr			
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Trp Gly Ala Asp Thr Ala Ala Cys Gly Asp Ile Ile Ser Gly Leu Pro			
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Val Ser Ala Arg Arg Gly Arg Glu Ile Leu Leu Gly Pro Ala Asp Asn			
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Gln Gln Thr Arg Gly Leu Leu Gly Cys Ile Ile Thr Ser Leu Thr Gly			
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Thr Gln Ser Phe Leu Ala Thr Cys Val Asn Gly Val Cys Trp Thr Val			
260	265	270	
ttc cat ggc gcc tca aag acc ttg gcc ggc ccc aaa ggc cca atc			864
Phe His Gly Ala Gly Ser Lys Thr Leu Ala Gly Pro Lys Gly Pro Ile			
275	280	285	
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Thr Gln Met Tyr Thr Asn Val Asp Gln Asp Leu Val Gly Trp Gln Ala			
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Leu Tyr Leu Val Thr Arg His Ala Asp Val Ile Pro Val Arg Arg Arg			
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ggc gac agt agg ggg agc ctg ctc tcc ccc agg cct gtc tcc tac ttg			1056 Gly
Asp Ser Arg Gly Ser Leu Leu Ser Pro Arg Pro Val Ser Tyr Leu			
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Lys Gly Ser Ser Gly Gly Pro Leu Leu Cys Pro Ser Gly His Ala Val																																																																																																													
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Gly Ile Phe Arg Ala Ala Val Cys Thr Arg Gly Val Ala Lys Ala Val																																																																																																													
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Ile Leu Leu Thr Cys Ala Val His Pro Glu Leu Ile Phe Asp Ile Thr																																																																																																													
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Lys Leu Leu Leu Ala Ile Phe Gly Pro Leu Met Val Leu Gln Ala Gly																																																																																																													
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190																																																																																																													
Val Ser Ala Arg Arg Gly Arg Glu Ile Leu Leu Gly Pro Ala Asp Asn																																																																																																													

195

200

205

Phe Glu Gly Gln Gly Trp Arg Leu Leu Ala Pro Ile Thr Ala Tyr Ser
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Gln Gln Thr Arg Gly Leu Leu Gly Cys Ile Ile Thr Ser Leu Thr Gly
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Arg Asp Lys Asn Gln Val Glu Gly Glu Val Gln Val Val Ser Thr Ala
 245 250 255

Thr Gln Ser Phe Leu Ala Thr Cys Val Asn Gly Val Cys Trp Thr Val
 260 265 270

Phe His Gly Ala Gly Ser Lys Thr Leu Ala Gly Pro Lys Gly Pro Ile
 275 280 285

Thr Gln Met Tyr Thr Asn Val Asp Gln Asp Leu Val Gly Trp Gln Ala
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Pro Pro Gly Ala Arg Ser Met Thr Pro Cys Thr Cys Gly Ser Ser Asp
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Leu Tyr Leu Val Thr Arg His Ala Asp Val Ile Pro Val Arg Arg Arg
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Gly Asp Ser Arg Gly Ser Leu Leu Ser Pro Arg Pro Val Ser Tyr Leu
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Lys Gly Ser Ser Gly Gly Pro Leu Leu Cys Pro Ser Gly His Ala Val
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Gly Ile Phe Arg Ala Ala Val Cys Thr Arg Gly Val Ala Lys Ala Val
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 Gly Ile Thr Lys Val Pro Tyr Phe Val Arg Ala Gln Gly Leu Ile Arg
 20 25 30

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gcc ttc atg aag cta gct gct gtc aca ggt acg tac gtt tat gac cat Ala Phe Met Lys Leu Ala Ala Leu Thr Gly Thr Tyr Val Tyr Asp His 50 55 60	192
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Leu Lys Gly Ser Ser Gly Gly Pro Leu Leu Cys Pro Ser Gly His Ala																																																																																																													
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Val Gly Ile Phe Arg Ala Ala Val Cys Thr Arg Gly Val Ala Lys Ala																																																																																																													
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Gly Ile Thr Lys Val Pro Tyr Phe Val Arg Ala Gln Gly Leu Ile Arg																																																																																																													
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Ala Phe Met Lys Leu Ala Ala Leu Thr Gly Thr Tyr Val Tyr Asp His																																																																																																													
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Leu Thr Pro Leu Gln Asp Trp Ala His Ala Gly Leu Arg Asp Leu Ala																																																																																																													
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Thr Trp Gly Ala Asp Thr Ala Ala Cys Gly Asp Ile Ile Ser Gly Leu																																																																																																													
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Asn Phe Glu Gly Gln Gly Trp Arg Leu Leu Ala Pro Ile Thr Ala Tyr																																																																																																													
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Ser Gln Gln Thr Arg Gly Leu Leu Gly Cys Ile Ile Thr Ser Leu Thr																																																																																																													
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Ala Thr Gln Ser Phe Leu Ala Thr Cys Val Asn Gly Val Cys Trp Thr																																																																																																													
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190																																																																																																													

Val Phe His Gly Ala Gly Ser Lys Thr Leu Ala Gly Pro Lys Gly Pro
195 200 205

Ile Thr Gln Met Tyr Thr Asn Val Asp Gln Asp Leu Val Gly Trp Gln
210 215 220

Ala Pro Pro Gly Ala Arg Ser Met Thr Pro Cys Thr Cys Gly Ser Ser
225 230 235 240

Asp Leu Tyr Leu Val Thr Arg His Ala Asp Val Ile Pro Val Arg Arg
245 250 255

Arg Gly Asp Ser Arg Gly Ser Leu Leu Ser Pro Arg Pro Val Ser Tyr
260 265 270

Leu Lys Gly Ser Ser Gly Gly Pro Leu Leu Cys Pro Ser Gly His Ala
275 280 285

Val Gly Ile Phe Arg Ala Ala Val Cys Thr Arg Gly Val Ala Lys Ala
290 295 300

Val Asp Phe Ile Pro Val Glu Ser Met Glu Thr Thr Met Arg Thr Ser
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Ser Ala Trp Arg His Pro Gln Phe Gly Gly Lys Lys Lys Lys
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Met Ala Phe Met Lys Leu Ala Ala Leu Thr Gly Thr Tyr Val Tyr Asp
35 40 45

His Leu Thr Pro Leu Gln Asp Trp Ala His Ala Gly Leu Arg Asp Leu
50 55 60

Ala Val Ala Val Glu Pro Val Ile Phe Ser Asp Met Glu Val Lys Ile
65 70 75 80

Ile Thr Trp Gly Ala Asp Thr Ala Ala Cys Gly Asp Ile Ile Ser Gly
85 90 95

Leu Pro Val Ser Ala Arg Arg Gly Arg Glu Ile Leu Leu Gly Pro Ala
100 105 110

Asp Asn Phe Glu Gly Gln Gly Trp Arg Leu Leu Ala Pro Ile Thr Ala
115 120 125

Tyr Ser Gln Gln Thr Arg Gly Leu Leu Gly Cys Ile Ile Thr Ser Leu
130 135 140

Thr Gly Arg Asp Lys Asn Gln Val Glu Gly Glu Val Gln Val Val Ser
145 150 155 160

Thr Ala Thr Gln Ser Phe Leu Ala Thr Cys Val Asn Gly Val Cys Trp
165 170 175

Thr Val Phe His Gly Ala Gly Ser Lys Thr Leu Ala Gly Pro Lys Gly
180 185 190

Pro Ile Thr Gln Met Tyr Thr Asn Val Asp Gln Asp Leu Val Gly Trp
195 200 205

Gln Ala Pro Pro Gly Ala Arg Ser Met Thr Pro Cys Thr Cys Gly Ser
210 215 220

Ser Asp Leu Tyr Leu Val Thr Arg His Ala Asp Val Ile Pro Val Arg
225 230 235 240

Arg Arg Gly Asp Ser Arg Gly Ser Leu Leu Ser Pro Arg Pro Val Ser
245 250 255

Tyr Leu Lys Gly Ser Ser Gly Gly Pro Leu Leu Cys Pro Ser Gly His
260 265 270

Ala Val Gly Ile Phe Arg Ala Ala Val Cys Thr Arg Gly Val Ala Lys
275 280 285

Ala Val Asp Phe Ile Pro Val Glu Ser Met Glu Thr Thr Met Arg
290 295 300

<210> 11

<211> 393

<212> PRT

<213> HCV

<400> 11

Met Ala Ala Ser Cys Gly Gly Ala Val Phe Ile Gly Leu Ala Leu Leu
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Thr Leu Ser Pro Tyr Tyr Lys Val Leu Leu Ala Arg Leu Ile Trp Trp
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Leu Gln Tyr Leu Ile Thr Arg Val Glu Ala His Leu Gln Val Trp Ile
35 40 45

Pro Pro Leu Asn Val Arg Gly Gly Arg Asp Ala Ile Ile Leu Leu Thr
50 55 60

Cys Ala Val His Pro Glu Leu Ile Phe Asp Ile Thr Lys Leu Leu
65 70 75 80

Ala Ile Phe Gly Pro Leu Met Val Leu Gln Ala Gly Ile Thr Lys Val
85 90 95

Pro Tyr Phe Val Arg Ala Gln Gly Leu Ile Arg Ala Cys Met Leu Val
100 105 110

Arg Lys Ala Ala Gly Gly His Tyr Val Gln Met Ala Phe Met Lys Leu
115 120 125

Ala Ala Leu Thr Gly Thr Tyr Val Tyr Asp His Leu Thr Pro Leu Gln
130 135 140

Asp Trp Ala His Ala Gly Leu Arg Asp Leu Ala Val Ala Val Glu Pro
145 150 155 160

Val Ile Phe Ser Asp Met Glu Val Lys Ile Ile Thr Trp Gly Ala Asp
165 170 175

Thr Ala Ala Cys Gly Asp Ile Ile Ser Gly Leu Pro Val Ser Ala Arg
180 185 190

Arg Gly Arg Glu Ile Leu Leu Gly Pro Ala Asp Asn Phe Glu Gly Gln
195 200 205

Gly Trp Arg Leu Leu Ala Pro Ile Thr Ala Tyr Ser Gln Gln Thr Arg
210 215 220

Gly Leu Leu Gly Cys Ile Ile Thr Ser Leu Thr Gly Arg Asp Lys Asn
225 230 235 240

Gln Val Glu Gly Glu Val Gln Val Val Ser Thr Ala Thr Gln Ser Phe
245 250 255

Leu Ala Thr Cys Val Asn Gly Val Cys Trp Thr Val Phe His Gly Ala
260 265 270

Gly Ser Lys Thr Leu Ala Gly Pro Lys Gly Pro Ile Thr Gln Met Tyr
275 280 285

Thr Asn Val Asp Gln Asp Leu Val Gly Trp Gln Ala Pro Pro Gly Ala
290 295 300

Arg Ser Met Thr Pro Cys Thr Cys Gly Ser Ser Asp Leu Tyr Leu Val
305 310 315 320

Thr Arg His Ala Asp Val Ile Pro Val Arg Arg Arg Gly Asp Ser Arg
325 330 335

Gly Ser Leu Leu Ser Pro Arg Pro Val Ser Tyr Leu Lys Gly Ser Ser
340 345 350

Gly Gly Pro Leu Leu Cys Pro Ser Gly His Ala Val Gly Ile Phe Arg
355 360 365

Ala Ala Val Cys Thr Arg Gly Val Ala Lys Ala Val Asp Phe Ile Pro
370 375 380

Val Glu Ser Met Glu Thr Thr Met Arg
385 390

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Val Trp Ile Pro Pro Leu Asn Val Arg Gly Gly Arg Asp Ala Ile Ile
35 40 45

Leu Leu Thr Cys Ala Val His Pro Glu Leu Ile Phe Asp Ile Thr Lys
50 55 60

Leu Leu Leu Ala Ile Phe Gly Pro Leu Met Val Leu Gln Ala Gly Ile

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Thr Lys Val Pro Tyr Phe Val Arg Ala Gln Gly Leu Ile Arg Ala Cys			
85	90	95	
Met Leu Val Arg Lys Ala Ala Gly Gly His Tyr Val Gln Met Ala Phe			
100	105	110	
Met Lys Leu Ala Ala Leu Thr Gly Thr Tyr Val Tyr Asp His Leu Thr			
115	120	125	
Pro Leu Gln Asp Trp Ala His Ala Gly Leu Arg Asp Leu Ala Val Ala			
130	135	140	
Val Glu Pro Val Ile Phe Ser Asp Met Glu Val Lys Ile Ile Thr Trp			
145	150	155	160
Gly Ala Asp Thr Ala Ala Cys Gly Asp Ile Ile Ser Gly Leu Pro Val			
165	170	175	
Ser Ala Arg Arg Gly Arg Glu Ile Leu Leu Gly Pro Ala Asp Asn Phe			
180	185	190	
Glu Gly Gln Gly Trp Arg Leu Leu Ala Pro Ile Thr Ala Tyr Ser Gln			
195	200	205	
Gln Thr Arg Gly Leu Leu Gly Cys Ile Ile Thr Ser Leu Thr Gly Arg			
210	215	220	
Asp Lys Asn Gln Val Glu Gly Glu Val Gln Val Val Ser Thr Ala Thr			
225	230	235	240
Gln Ser Phe Leu Ala Thr Cys Val Asn Gly Val Cys Trp Thr Val Phe			
245	250	255	
His Gly Ala Gly Ser Lys Thr Leu Ala Gly Pro Lys Gly Pro Ile Thr			
260	265	270	
Gln Met Tyr Thr Asn Val Asp Gln Asp Leu Val Gly Trp Gln Ala Pro			
275	280	285	
Pro Gly Ala Arg Ser Met Thr Pro Cys Thr Cys Gly Ser Ser Asp Leu			
290	295	300	
Tyr Leu Val Thr Arg His Ala Asp Val Ile Pro Val Arg Arg Arg Gly			
305	310	315	320
Asp Ser Arg Gly Ser Leu Leu Ser Pro Arg Pro Val Ser Tyr Leu Lys			
325	330	335	
Gly Ser Ser Gly Gly Pro Leu Leu Cys Pro Ser Gly His Ala Val Gly			
340	345	350	
Ile Phe Arg Ala Ala Val Cys Thr Arg Gly Val Ala Lys Ala Val Asp			
355	360	365	
Phe Ile Pro Val Glu Ser Met Glu Thr Thr Met Arg			
370	375	380	

<210> 13
<211> 352
<212> PRT
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<400> 13

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Asp Ala Ile Ile Leu Leu Thr Cys Ala Val His Pro Glu Leu Ile Phe
20 25 30

Asp Ile Thr Lys Leu Leu Ala Ile Phe Gly Pro Leu Met Val Leu
35 40 45

Gln Ala Gly Ile Thr Lys Val Pro Tyr Phe Val Arg Ala Gln Gly Leu
50 55 60

Ile Arg Ala Cys Met Leu Val Arg Lys Ala Ala Gly Gly His Tyr Val
65 70 75 80

Gln Met Ala Phe Met Lys Leu Ala Ala Leu Thr Gly Thr Tyr Val Tyr
85 90 95

Asp His Leu Thr Pro Leu Gln Asp Trp Ala His Ala Gly Leu Arg Asp
100 105 110

Leu Ala Val Ala Val Glu Pro Val Ile Phe Ser Asp Met Glu Val Lys
115 120 125

Ile Ile Thr Trp Gly Ala Asp Thr Ala Ala Cys Gly Asp Ile Ile Ser
130 135 140

Gly Leu Pro Val Ser Ala Arg Arg Gly Arg Glu Ile Leu Leu Gly Pro
145 150 155 160

Ala Asp Asn Phe Glu Gly Gln Gly Trp Arg Leu Leu Ala Pro Ile Thr
165 170 175

Ala Tyr Ser Gln Gln Thr Arg Gly Leu Leu Gly Cys Ile Ile Thr Ser
180 185 190

Leu Thr Gly Arg Asp Lys Asn Gln Val Glu Gly Glu Val Gln Val Val
195 200 205

Ser Thr Ala Thr Gln Ser Phe Leu Ala Thr Cys Val Asn Gly Val Cys
210 215 220

Trp Thr Val Phe His Gly Ala Gly Ser Lys Thr Leu Ala Gly Pro Lys
225 230 235 240

Gly Pro Ile Thr Gln Met Tyr Thr Asn Val Asp Gln Asp Leu Val Gly
245 250 255

Trp Gln Ala Pro Pro Gly Ala Arg Ser Met Thr Pro Cys Thr Cys Gly
260 265 270

Ser Ser Asp Leu Tyr Leu Val Thr Arg His Ala Asp Val Ile Pro Val
275 280 285

Arg Arg Arg Gly Asp Ser Arg Gly Ser Leu Leu Ser Pro Arg Pro Val
290 295 300

Ser Tyr Leu Lys Gly Ser Ser Gly Gly Pro Leu Leu Cys Pro Ser Gly
305 310 315 320

His Ala Val Gly Ile Phe Arg Ala Ala Val Cys Thr Arg Gly Val Ala
325 330 335

Lys Ala Val Asp Phe Ile Pro Val Glu Ser Met Glu Thr Thr Met Arg
340 345 350

<210> 14

<211> 341

<212> PRT

<213> HCV

<400> 14

Val Arg Gly Gly Arg Asp Ala Ile Ile Leu Leu Thr Cys Ala Val His
1 5 10 15

Pro Glu Leu Ile Phe Asp Ile Thr Lys Leu Leu Leu Ala Ile Phe Gly
20 25 30

Pro Leu Met Val Leu Gln Ala Gly Ile Thr Lys Val Pro Tyr Phe Val
35 40 45

Arg Ala Gln Gly Leu Ile Arg Ala Cys Met Leu Val Arg Lys Ala Ala
50 55 60

Gly Gly His Tyr Val Gln Met Ala Phe Met Lys Leu Ala Ala Leu Thr
65 70 75 80

Gly Thr Tyr Val Tyr Asp His Leu Thr Pro Leu Gln Asp Trp Ala His
85 90 95

Ala Gly Leu Arg Asp Leu Ala Val Ala Val Glu Pro Val Ile Phe Ser
100 105 110

Asp Met Glu Val Lys Ile Ile Thr Trp Gly Ala Asp Thr Ala Ala Cys
115 120 125

Gly Asp Ile Ile Ser Gly Leu Pro Val Ser Ala Arg Arg Gly Arg Glu
130 135 140

Ile Leu Leu Gly Pro Ala Asp Asn Phe Glu Gly Gln Gly Trp Arg Leu
145 150 155 160

Leu Ala Pro Ile Thr Ala Tyr Ser Gln Gln Thr Arg Gly Leu Leu Gly
165 170 175

Cys Ile Ile Thr Ser Leu Thr Gly Arg Asp Lys Asn Gln Val Glu Gly
180 185 190

Glu Val Gln Val Val Ser Thr Ala Thr Gln Ser Phe Leu Ala Thr Cys
195 200 205

Val Asn Gly Val Cys Trp Thr Val Phe His Gly Ala Gly Ser Lys Thr
210 215 220

Leu Ala Gly Pro Lys Gly Pro Ile Thr Gln Met Tyr Thr Asn Val Asp
 225 230 235 240
 Gln Asp Leu Val Gly Trp Gln Ala Pro Pro Gly Ala Arg Ser Met Thr
 245 250 255
 Pro Cys Thr Cys Gly Ser Ser Asp Leu Tyr Leu Val Thr Arg His Ala
 260 265 270
 Asp Val Ile Pro Val Arg Arg Arg Gly Asp Ser Arg Gly Ser Leu Leu
 275 280 285
 Ser Pro Arg Pro Val Ser Tyr Leu Lys Gly Ser Ser Gly Gly Pro Leu
 290 295 300
 Leu Cys Pro Ser Gly His Ala Val Gly Ile Phe Arg Ala Ala Val Cys
 305 310 315 320
 Thr Arg Gly Val Ala Lys Ala Val Asp Phe Ile Pro Val Glu Ser Met
 325 330 335
 Glu Thr Thr Met Arg
 340

<210> 15

<211> 292

<212> PRT

<213> HCV

<400> 15

Ala Gln Gly Leu Ile Arg Ala Cys Met Leu Val Arg Lys Ala Ala Gly
 1 5 10 15

Gly His Tyr Val Gln Met Ala Phe Met Lys Leu Ala Ala Leu Thr Gly
 20 25 30

Thr Tyr Val Tyr Asp His Leu Thr Pro Leu Gln Asp Trp Ala His Ala
 35 40 45

Gly Leu Arg Asp Leu Ala Val Ala Val Glu Pro Val Ile Phe Ser Asp
 50 55 60

Met Glu Val Lys Ile Ile Thr Trp Gly Ala Asp Thr Ala Ala Cys Gly
 65 70 75 80

Asp Ile Ile Ser Gly Leu Pro Val Ser Ala Arg Arg Gly Arg Glu Ile
 85 90 95

Leu Leu Gly Pro Ala Asp Asn Phe Glu Gly Gln Gly Trp Arg Leu Leu
 100 105 110

Ala Pro Ile Thr Ala Tyr Ser Gln Gln Thr Arg Gly Leu Leu Gly Cys
 115 120 125

Ile Ile Thr Ser Leu Thr Gly Arg Asp Lys Asn Gln Val Glu Gly Glu
 130 135 140

Val Gln Val Val Ser Thr Ala Thr Gln Ser Phe Leu Ala Thr Cys Val

145	150	155	160
Asn Gly Val Cys Trp Thr Val Phe His Gly Ala Gly Ser Lys Thr Leu			
165	170	175	
Ala Gly Pro Lys Gly Pro Ile Thr Gln Met Tyr Thr Asn Val Asp Gln			
180	185	190	
Asp Leu Val Gly Trp Gln Ala Pro Pro Gly Ala Arg Ser Met Thr Pro			
195	200	205	
Cys Thr Cys Gly Ser Ser Asp Leu Tyr Leu Val Thr Arg His Ala Asp			
210	215	220	
Val Ile Pro Val Arg Arg Gly Asp Ser Arg Gly Ser Leu Leu Ser			
225	230	235	240
Pro Arg Pro Val Ser Tyr Leu Lys Gly Ser Ser Gly Gly Pro Leu Leu			
245	250	255	
Cys Pro Ser Gly His Ala Val Gly Ile Phe Arg Ala Ala Val Cys Thr			
260	265	270	
Arg Gly Val Ala Lys Ala Val Asp Phe Ile Pro Val Glu Ser Met Glu			
275	280	285	
Thr Thr Met Arg			
290			

<210> 16

<211> 303

<212> PRT

<213> HCV

<400> 16

Ala Gly Ile Thr Lys Val Pro Tyr Phe Val Arg Ala Gln Gly Leu Ile			
1	5	10	15

Arg Ala Cys Met Leu Val Arg Lys Ala Ala Gly Gly His Tyr Val Gln		
20	25	30

Met Ala Phe Met Lys Leu Ala Ala Leu Thr Gly Thr Tyr Val Tyr Asp		
35	40	45

Ala Leu Thr Pro Leu Gln Asp Trp Ala His Ala Gly Leu Arg Asp Leu		
50	55	60

Ala Val Ala Val Glu Pro Val Ile Phe Ser Asp Met Glu Val Lys Ile			
65	70	75	80

Ile Thr Trp Gly Ala Asp Thr Ala Ala Cys Gly Asp Ile Ile Ser Gly		
85	90	95

Leu Pro Val Ser Ala Arg Arg Gly Arg Glu Ile Leu Leu Gly Pro Ala		
100	105	110

Asp Asn Phe Glu Gly Gln Gly Trp Arg Leu Leu Ala Pro Ile Thr Ala		
115	120	125

Tyr Ser Gln Gln Thr Arg Gly Leu Leu Gly Cys Ile Ile Thr Ser Leu
 130 135 140
 Thr Gly Arg Asp Lys Asn Gln Val Glu Gly Glu Val Gln Val Val Ser
 145 150 155 160
 Thr Ala Thr Gln Ser Phe Leu Ala Thr Cys Val Asn Gly Val Cys Trp
 165 170 175
 Thr Val Phe His Gly Ala Gly Ser Lys Thr Leu Ala Gly Pro Lys Gly
 180 185 190
 Pro Ile Thr Gln Met Tyr Thr Asn Val Asp Gln Asp Leu Val Gly Trp
 195 200 205
 Gln Ala Pro Pro Gly Ala Arg Ser Met Thr Pro Cys Thr Cys Gly Ser
 210 215 220
 Ser Asp Leu Tyr Leu Val Thr Arg His Ala Asp Val Ile Pro Val Arg
 225 230 235 240
 Arg Arg Gly Asp Ser Arg Gly Ser Leu Leu Ser Pro Arg Pro Val Ser
 245 250 255
 Tyr Leu Lys Gly Ser Ser Gly Gly Pro Leu Leu Cys Pro Ser Gly His
 260 265 270
 Ala Val Gly Ile Phe Arg Ala Ala Val Cys Thr Arg Gly Val Ala Lys
 275 280 285
 Ala Val Asp Phe Ile Pro Val Glu Ser Met Glu Thr Thr Met Arg
 290 295 300

 <210> 17
 <211> 301
 <212> PRT
 <213> HCV

 <400> 17
 Ala Gly Ile Thr Lys Val Pro Tyr Phe Val Arg Ala Gln Gly Leu Ile
 1 5 10 15
 Arg Ala Cys Met Leu Val Arg Lys Ala Ala Gly Gly His Tyr Val Gln
 20 25 30
 Met Ala Phe Met Lys Leu Ala Ala Leu Thr Gly Thr Tyr Val Tyr Asp
 35 40 45
 His Leu Thr Pro Leu Gln Asp Trp Ala His Ala Gly Leu Arg Asp Leu
 50 55 60
 Ala Val Ala Val Glu Pro Val Ile Phe Ser Asp Met Glu Val Lys Ile
 65 70 75 80
 Ile Thr Trp Gly Ala Asp Thr Ala Ala Cys Gly Asp Ile Ile Ser Gly
 85 90 95
 Leu Pro Val Ser Ala Arg Arg Gly Arg Glu Ile Leu Leu Gly Pro Ala
 100 105 110

Asp Asn Phe Glu Gly Gln Gly Trp Arg Leu Pro Ile Thr Ala Tyr Ser
 115 120 125
 Gln Gln Thr Arg Gly Leu Leu Gly Cys Ile Ile Thr Ser Leu Thr Gly
 130 135 140
 Arg Asp Lys Asn Gln Val Glu Gly Glu Val Gln Val Val Ser Thr Ala
 145 150 155 160
 Thr Gln Ser Phe Leu Ala Thr Cys Val Asn Gly Val Cys Trp Thr Val
 165 170 175
 Phe His Gly Ala Gly Ser Lys Thr Leu Ala Gly Pro Lys Gly Pro Ile
 180 185 190
 Thr Gln Met Tyr Thr Asn Val Asp Gln Asp Leu Val Gly Trp Gln Ala
 195 200 205
 Pro Pro Gly Ala Arg Ser Met Thr Pro Cys Thr Cys Gly Ser Ser Asp
 210 215 220
 Leu Tyr Leu Val Thr Arg His Ala Asp Val Ile Pro Val Arg Arg Arg
 225 230 235 240
 Gly Asp Ser Arg Gly Ser Leu Leu Ser Pro Arg Pro Val Ser Tyr Leu
 245 250 255
 Lys Gly Ser Ser Gly Gly Pro Leu Leu Cys Pro Ser Gly His Ala Val
 260 265 270
 Gly Ile Phe Arg Ala Ala Val Cys Thr Arg Gly Val Ala Lys Ala Val
 275 280 285
 Asp Phe Ile Pro Val Glu Ser Met Glu Thr Thr Met Arg
 290 295 300

 <210> 18
 <211> 303
 <212> PRT
 <213> HCV

 <400> 18
 Ala Gly Ile Thr Lys Val Pro Tyr Phe Val Arg Ala Gln Gly Leu Ile
 1 5 10 15

 Arg Ala Cys Met Leu Val Arg Lys Ala Ala Gly Gly His Tyr Val Gln
 20 25 30

 Met Ala Phe Met Lys Leu Ala Ala Leu Thr Gly Thr Tyr Val Tyr Asp
 35 40 45

 His Leu Thr Pro Leu Gln Asp Trp Ala His Ala Gly Leu Arg Asp Leu
 50 55 60

 Ala Val Ala Val Glu Pro Val Ile Phe Ser Asp Met Glu Val Lys Ile
 65 70 75 80

 Ile Thr Trp Gly Ala Asp Thr Ala Ala Gly Asp Ile Ile Ser Gly

85

90

95

Leu Pro Val Ser Ala Arg Arg Gly Arg Glu Ile Leu Leu Gly Pro Ala
 100 105 110

Asp Asn Phe Glu Gly Gln Gly Trp Arg Leu Leu Ala Pro Ile Thr Ala
 115 120 125

Tyr Ser Gln Gln Thr Arg Gly Leu Leu Gly Cys Ile Ile Thr Ser Leu
 130 135 140

Thr Gly Arg Asp Lys Asn Gln Val Glu Gly Glu Val Gln Val Val Ser
 145 150 155 160

Thr Ala Thr Gln Ser Phe Leu Ala Thr Cys Val Asn Gly Val Cys Trp
 165 170 175

Thr Val Phe His Gly Ala Gly Ser Lys Thr Leu Ala Gly Pro Lys Gly
 180 185 190

Pro Ile Thr Gln Met Tyr Thr Asn Val Asp Gln Asp Leu Val Gly Trp
 195 200 205

Gln Ala Pro Pro Gly Ala Arg Ser Met Thr Pro Cys Thr Cys Gly Ser
 210 215 220

Ser Asp Leu Tyr Leu Val Thr Arg His Ala Asp Val Ile Pro Val Arg
 225 230 235 240

Arg Arg Gly Asp Ser Arg Gly Ser Leu Leu Ser Pro Arg Pro Val Ser
 245 250 255

Tyr Leu Lys Gly Ser Ser Gly Gly Pro Leu Leu Cys Pro Ser Gly His
 260 265 270

Ala Val Gly Ile Phe Arg Ala Ala Val Cys Thr Arg Gly Val Ala Lys
 275 280 285

Ala Val Asp Phe Ile Pro Val Glu Ser Met Glu Thr Thr Met Arg
 290 295 300

<210> 19

<211> 11

<212> PRT

<213> HCV

<220>

<221> VARIANT

<222> (1)...(1)

<223> Asp labeled with anthranilyl

<221> VARIANT

<222> (6)...(6)

<223> Xaa at position 6 is Abu

<221> VARIANT

<222> (6)...(7)

<223> Abu-A between 6 and 7 is C(O)-O

<221> VARIANT

<222> (9)...(9)
<223> Tyr at position 9 is derivatized with 3-NO2

<400> 19
Asp Asp Ile Val Pro Xaa Ala Met Tyr Thr Trp
1 5 10

<210> 20
<211> 6
<212> PRT
<213> HCV
<220>
<221> VARIANT
<222> (1)...(1)
<223> Asp labeled with anthranilyl

<221> VARIANT
<222> (6)...(6)
<223> Xaa at position 6 is Abu

<400> 20
Asp Asp Ile Val Pro Xaa
1 5

<210> 21
<211> 10
<212> PRT
<213> HCV
<400> 21
Ser Phe Glu Gly Gln Gly Trp Arg Leu Leu
1 5 10

<210> 22
<211> 20
<212> PRT
<213> HCV
<400> 22
Ser Phe Glu Gly Gln Gly Trp Arg Leu Leu Ala Pro Ile Thr Ala Tyr
1 5 10 15
Ser Gln Gln Thr
20

<210> 23
<211> 10
<212> PRT
<213> HCV
<400> 23
Ala Pro Ile Thr Ala Tyr Ser Gln Gln Thr
1 5 10

<210> 24
<211> 12
<212> PRT
<213> HCV

<400> 24
Lys Gly Trp Arg Leu Leu Ala Pro Ile Thr Ala Tyr
1 5 10

<210> 25
<211> 6
<212> PRT
<213> HCV

<400> 25
Ala Pro Ile Thr Ala Tyr
1 5
